SUBSECTION 8.13

Waste Management

8.13 Waste Management

This section evaluates the potential effects on human health and the environment from nonhazardous and hazardous waste generated at CVEC.

Section 8.13.1 presents LORS that apply to the generated waste. Section 8.13.2 describes the current condition of the proposed site, and Section 8.13.3 describes the waste and waste streams that are expected to be generated by the project. Section 8.13.4 describes waste disposal sites for nonhazardous and hazardous waste, and Section 8.13.5 describes methods that will be employed to manage the generated waste and mitigate its impacts on the environment. Section 8.13.6 discusses cumulative impacts, and Section 8.13.7 describes waste monitoring. Section 8.13.8 describes agencies that have jurisdiction over the generated waste and persons to contact in those agencies. Section 8.13.9 describes permits required for waste generated and a schedule for obtaining those permits, and Section 8.13.10 provides the references used to prepare this section.

8.13.1 Laws, Ordinances, Regulations, and Standards

Nonhazardous and hazardous waste handling at CVEC will be governed by federal, state, and local laws. Applicable laws and regulations address proper waste handling, storage, and disposal practices to protect the environment from contamination and protect facility workers and the surrounding community from exposure to nonhazardous and hazardous waste. The LORS applicable to waste handling at the CVEC facility are summarized in Table 8.13-1.

8.13.1.1 Federal

Wastewater is regulated by USEPA under the Clean Water Act (CWA). Industrial wastewater will be treated in a zero discharge treatment system and reused, as described in Section 2.0. Sanitary wastewater will be discharged to the City of San Joaquin sanitary sewer (see Section 8.14).

The federal statute that controls both nonhazardous and hazardous waste is RCRA, 42 USC 6901, et seq. RCRA's implementing regulations are found at 40 CFR 260, et seq. Subtitle D makes the regulation of nonhazardous waste the responsibility of the states; federal involvement is limited to establishing minimum criteria that prescribe the best practicable controls and monitoring requirements for solid waste disposal facilities. Subtitle C controls the generation, transportation, treatment, storage, and disposal of hazardous waste through a comprehensive "cradle-to-grave" system of hazardous waste management techniques and requirements. It applies to all states and to all generators of hazardous waste (above certain levels of waste produced). CVEC will conform with this law in its generation, storage, transport, and disposal of any hazardous waste generated at the facility. The USEPA has delegated its authority for implementing the law to the State of California.

8.13.1.2 State

Nonhazardous solid waste is regulated by the California Integrated Waste Management Act (CIWMA) of 1989, found in Public Resources Code (PRC) Section 40000, et. seq. This law provides an integrated statewide system of solid waste management by coordinating state and local efforts in source reduction, recycling, and land disposal safety. Counties are required to submit Integrated Waste Management Plans to the state. This law directly affects Fresno County and the solid waste hauler and disposer that will collect CVEC solid waste. It also affects CVEC to the extent that hazardous wastes are not to be disposed of with solid waste.

Wastewater is regulated by the State and Regional Water Quality Control Boards under the Porter-Cologne Water Quality Control Act. Other than sanitary wastewater, which is discharged to the City of San Joaquin's sanitary sewer, no wastewater will be discharged by CVEC (see Section 8.14).

RCRA allows states to develop their own programs to regulate hazardous waste. The programs must be at least as stringent as RCRA. California has developed its own program in the California Hazardous Waste Control Law (HWCL) (Health and Safety Code Section 25100, et seq.). The HWCL performs essentially the same regulatory functions as RCRA and is the law that will regulate hazardous waste at CVEC, since California has elected to develop its own program. However, the HWCL includes hazardous wastes that are not classified as hazardous waste under RCRA. Since hazardous wastes will be generated at the CVEC facility during construction and operation, the HWCL will require the Applicant to adhere to storage, recordkeeping, reporting, and training requirements for these wastes.

TABLE 8.13-1
Laws, Ordinances, Regulations, and Standards Applicable to CVEC Waste Management

LORS	Purpose	Applicability (AFC Section Explaining Conformance)
Federal		
RCRA Subtitle D	Regulates design and operation of solid waste landfills	CVEC solid waste will be collected and disposed of by a collection company in conformance with Subtitle D (Sections 8.13.5.1, 8.13.6, 8.13.2.1).
RCRA Subtitle C	Controls storage, treatment, and disposal of hazardous waste.	Hazardous waste will be handled by contractors in conformance with Subtitle C (Section 8.13.6).
CWA	Controls discharge of wastewater to the surface waters of the U.S.	CVEC will not discharge industrial wastewater. Sanitary wastewater will be discharged to the City of San Joaquin's sanitary sewer (Sections 8.13.4, 8.13.8, and Section 8.14).
State		
California Integrated Waste Management Act (CIWMA)	Controls solid waste collectors, recyclers, and depositors.	CVEC solid waste will be collected and disposed of by a collection company in conformance with the CIWMA (Sections 8.13.5.1, 8.13.6.1 and 8.13.6).
CA Hazardous Waste Control Law (HWCL)	Controls storage, treatment, and disposal of hazardous waste.	Hazardous waste will be handled by contractors in conformance with the HWCL (Sections 8.13.6.1 and 8.13.6.2).
Porter-Cologne Water Quality Control Act	Controls discharge of wastewater to the surface and ground waters of California.	CVEC will not discharge industrial wastewater. Sanitary wastewater will be discharged to the City of San Joaquin's sanitary sewer (Sections 8.13.4, 8.13.8 and Section 8.14).
California Fire Code	Controls storage of hazardous materials and wastes and the use and storage of flammable/combustible liquids.	Wastes will be accumulated and stored in accordance with Fire Code requirements. Permits for storage containers will be obtained, as needed, from the Fresno County Fire Department (Section 8.13.10).

TABLE 8.13-1
Laws, Ordinances, Regulations, and Standards Applicable to CVEC Waste Management

LORS	Purpose	Applicability (AFC Section Explaining Conformance)
Local		
Fresno County General Plan, Public Facilities Element, PF-F.1	County promotes maximum use of solid waste source reduction, reuse, recycling, composting, and environmentally safe transformation of wastes.	CVEC will follow hierarchical approach to solid waste management (Section 8.13.6).
Fresno County General Plan, Public Facilities Element, PF-F.4	County shall ensure that all new development complies with applicable provisions of County Integrated Solid Waste Management Plan	CVEC will comply with county's solid waste management plan (Section 8.13.3).

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
SARA Superfund Amendments and Reauthorization Act
RMP Risk Management Plan
TPQ Threshold Planning Quantity
HMBP Hazardous Materials Business Plan
CAA Clean Air Act
CUPA Certified Unified Program Agency
EHS Extremely hazardous substance.
SERC State emergency response commission
LEPC Local emergency planning committee.

8.13.1.3 Local

The Fresno County Human Services System's Department of Community Health, Environmental Health System, will have the responsibility for administering and enforcing the CIWMA for solid, nonhazardous waste for CVEC.

For hazardous waste, local regulation consists primarily of the administration and enforcement of the HWCL. The Fresno County CUPA is the local entity that will regulate hazardous waste at the CVEC. The Fresno County Human Services System's Department of Community Health, Environmental Health System, is the designated CUPA for Fresno County. For emergency spills, the facility will employ a spill cleanup contractor. Fresno County does not have a formally trained Hazardous Incident Team to provide spill cleanup. The County Fire Department will respond and will identify the type and source of the hazardous material, oversee evacuation of people, and confine the spilled material if possible. Cleanup of the material is the responsibility of the facility causing the spill. The Fresno County Fire Department station located at 25101 West Morton Avenue in Tranquillity is the nearest station to the proposed project site. Backup is provided by the Mendota station at 101 McCabe Avenue in Mendota, California and by the Caruthers station at 2701 W. Tahoe Street in Caruthers, California.

8.13.1.4 Codes

The design, engineering, and construction of hazardous waste storage and handling systems will be in accordance with all applicable codes and standards, including:

- The Uniform Fire Code
- The Uniform Building Code
- The Uniform Plumbing Code
- California Building Code

- California Fire Code

8.13.2 Environmental Condition of Site

A Phase I Environmental Site Assessment (ESA) was conducted by Environmental Resources Management (ERM) in accordance with the ASTM Standard E 1527, Standard Practice for Environmental Site Assessments. The ESA report, dated August 3, 2001, revealed the following environmental conditions resulting from present or past activities. A copy of the ESA is contained in Appendix 8.13A.

- The site has been used for agriculture for over 100 years. It consists of unimproved land used to grow row crops, such as cotton, alfalfa, and wheat. There are no structures or utilities on the property. No known underground or aboveground storage tanks have ever been located on the proposed site.
- Pesticides and fertilizers have been applied to the site, so there may be elevated concentrations of pesticides or other chemicals in the soil.
- An abandoned agricultural equipment maintenance and fueling facility is located adjacent to the proposed site on its northern boundary. Four aboveground storage tanks are located at the facility, as well as several corroded 55-gallon drums. Records reviewed by ERM did not identify any known leaks from the tanks at this site, but there is the potential that undocumented releases may have occurred in the past. Because no earth-disturbing activities are proposed for this area, it is not likely that undocumented releases will pose a threat to worker health and safety.
- Two leaking underground storage tanks were identified approximately 3/4 mile from the proposed site. The ESA concluded that it is unlikely that these leaks would impact the proposed site.

8.13.3 Project Waste Generation

Wastewater, solid nonhazardous waste, and liquid and solid hazardous waste will be generated at the CVEC site during facility construction and operation. Solid nonhazardous waste will also be generated during the construction of the electric transmission line, the natural gas supply line, and waterlines.

8.13.3.1 Construction Phase

During construction, the primary waste generated will be solid nonhazardous waste. However, some nonhazardous liquid waste and hazardous waste (solid and liquid) will also be generated. Most of the hazardous wastes will be generated at the plant site, but a minimal quantity of hazardous waste will be generated during construction of the electric transmission line, natural gas supply line, and water supply and wastewater discharge lines. The types of waste and their estimated quantities are described below.

8.13.3.1.1 Nonhazardous Solid Waste

Listed below are nonhazardous waste streams that could potentially be generated from construction of the generating facility, the electric transmission line, the natural gas supply line, and the water supply line.

Paper, Wood, Glass, and Plastics

Paper, wood, glass, and plastics will be generated from packing materials, waste lumber, insulation, and empty nonhazardous chemical containers. Approximately 100 tons of these wastes will be generated during project construction. These wastes will be recycled where practical. Waste that

cannot be recycled will be disposed of weekly in a Class III landfill. Onsite, the waste will be placed in dumpsters.

Concrete

Approximately 70 tons of excess concrete will be generated during construction. Waste concrete will be disposed of weekly in a Class III landfill or at clean fill sites, if available.

Metal

Metal will include steel from welding/cutting operations, packing materials, and empty nonhazardous chemical containers. Aluminum waste will be generated from packing materials and electrical wiring. Approximately 25 tons of metal will be generated during construction. Waste will be recycled where practical, and nonrecyclable waste will be deposited in a Class III landfill.

Drilling Mud

Some drilling could be required to install natural gas and water pipelines. Drilling mud, consisting of nontoxic bentonite clay, will be used to lubricate and cool the drilling bit. Up to 2,100 barrels (roughly 650 tons) could be used in the drilling and will require disposal at a Class II or III landfill.

8.13.3.1.2 Nonhazardous Wastewater

Nonhazardous wastewater will be generated, including sanitary wastewater, equipment washwater, stormwater runoff, wastewater from pressure testing the gas supply line, and water from excavation dewatering. Sanitary waste will be collected in portable, self-contained toilets. Equipment washwater will be contained at specifically designated wash areas and disposed of offsite. Stormwater runoff will be managed in accordance with the contractor-developed stormwater pollution prevention plan that will be approved by the appropriate agencies prior to the start of construction.

The gas supply pipeline hydrostatic test water will be filtered to collect any sediment and welding fragments. The water will be collected, tested, and disposed of by the pipeline contractor.

8.13.3.1.3 Hazardous Waste

Most of the hazardous waste generated during construction will consist of liquid waste, such as flushing and cleaning fluids, passivating fluid (to prepare pipes for use), and solvents. Some hazardous solid waste, such as welding materials and dried paint, may also be generated.

Flushing and cleaning waste liquid will be generated when pipes and boilers are cleaned and flushed. Passivating fluid waste is generated when high temperature pipes are treated with either a phosphate or nitrate solution. The volume of flushing and cleaning and passivating liquid waste generated is estimated to be one to two times the internal volume of the pipes cleaned. The quantity of welding, solvent, and paint waste is expected to be minimal.

The construction contractor will be considered the generator of hazardous construction waste and will be responsible for proper handling of hazardous waste in compliance with all applicable federal, state, and local laws and regulations, including licensing, personnel training, accumulation limits and times, and reporting and recordkeeping. The hazardous waste will be collected in satellite accumulation containers near the points of generation. It will be moved daily to the contractor's 90-day hazardous waste storage area, located at the site construction laydown area. The waste will be removed from the site by a certified hazardous waste collection company and delivered to an authorized hazardous waste management facility, prior to expiration of the 90-day storage limit.

8.13.3.2 Operation Phase

During CVEC facility operation, the primary waste generated will be nonhazardous solid waste. However, varying quantities of both solid and liquid hazardous waste will also be generated periodically. The types of waste and their estimated quantities are discussed below.

8.13.3.2.1 Nonhazardous Solid Waste

The majority of solid waste will be salts removed from the reclaimed water. The CVEC facility will also produce maintenance and generating facility wastes, typical of power generation operations. These will include rags, turbine air filters, broken and rusted metal and machine parts, defective or broken electrical materials, empty containers, the typical refuse generated by workers and small office operations, and other miscellaneous solid wastes. The quantity generated is estimated to be about 70 cubic yards per year (approximately 50 tons per year). Large metal parts will be recycled.

Zero Discharge Treatment System

Cooling tower blowdown will be sent to the zero discharge treatment system. Here, water will be recovered and reused as makeup for the demineralized water system or returned to the cooling tower. The remaining nonhazardous solid waste residual will be collected and disposed of in a suitable offsite landfill. A detailed description of the zero discharge treatment system is presented in Section 2.2.9.1.2.

Residual solids from water reclaimed from the zero discharge treatment system will consist mainly of salt cake. During baseload operation, an average of 29 tons per day of this nonhazardous waste will be generated and transported to an offsite landfill for disposal. During peak operations, it is estimated that 48 tons per day of this waste will be generated. Expect annual waste generation is 14,000 tons.

8.13.3.2.2 Nonhazardous Wastewater

Water balance diagrams, provided in Figures 2.2-6a through 2.2-6b, illustrate the expected waste streams and flow rates for the CVEC generating facility. The wastewater collection system will collect sanitary wastewater from sinks, toilets, and other sanitary facilities to be discharged to the City of San Joaquin's sanitary sewer.

Plant Drains-Oil/Water Separator

General facility drainage will consist of area washdown, sample drains, equipment leakage, and drainage from facility equipment areas. Water from these areas will be collected in a system of floor drains, hub drains, sumps, and piping and routed to the facility wastewater collection system. Drains that could contain oil or grease will first be routed through an oil/water separator. Water from the plant wastewater collection system will be recycled to the cooling tower basin. Wastewater from combustion turbine water washes will be collected in a holding tank. If cleaning chemicals were not used during the water wash procedure, the wastewater will be discharged to the oil/water separator. Wastewater containing cleaning chemicals will be trucked offsite for disposal at an approved wastewater disposal facility.

8.13.3.2.3 Hazardous Waste

Hazardous waste generated will include waste lubricating oil, used oil filters, spent SCR and oxidation catalysts, and chemical cleaning wastes. The catalyst units will contain heavy metals that are considered hazardous. Chemical cleaning wastes will be generated from the periodic cleaning of the HRSGs and associated piping. They will consist of alkaline and acidic cleaning solutions used during chemical cleaning of the HRSG boiler system turbine wash and HRSG fireside washwaters. These wastes generally contain high concentrations of heavy metals and will be collected for offsite disposal.

The chemical feed area drains will collect spillage, tank overflows, effluent from maintenance operations, and liquid from area washdowns. After neutralization, if required, water collected from the chemical storage areas will be directed to the cooling tower basin. The quantity of this effluent is expected to be minimal.

Wastes that will be generated at the facility are summarized in Table 8.13-2.

TABLE 8.13-2
Hazardous Wastes Generated at the CVEC Facility

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Lubricating oil	Small leaks and spills from the gas turbine lubricating oil system	Hydrocarbons	500 lb/yr	Hazardous	Cleaned up using sorbent and rags – disposed of by certified oil recycler
Lubricating oil filters	Gas turbine lubricating oil system	Paper, metal, and hydrocarbons	1,000 lb/yr	Hazardous	Recycled by certified oil recycler
Laboratory analysis waste	Water treatment	Sulfuric acid	500 gals/yr	Hazardous	Recycled by certified recycler
SCR catalyst units	SCR system (Warranty is 3 years-use tends to be 3 to 5 years)	Metal and heavy metals, including vanadium	1,000 lb every 3 to 5 yrs	Hazardous	Recycled by SCR manufacturer or disposed of in Class I landfill
CO catalyst units	Auxiliary boiler (Use tends to be 3 to 5 years)	Metal and heavy metals, including vanadium	1,000 lb every 3 to 5 yrs	Hazardous	Recycled by manufacturer
Oily rags	Maintenance, wipe down of equipment, etc.	Hydrocarbons, cloth	300 lb/yr (~800 rags/yr)	Hazardous	Recycled by certified oil recycler
Oil sorbents	Cleanup of small spills	Hydrocarbons	200 lb/yr	Hazardous	Recycled or disposed of by certified oil recycler
Cooling tower sludge	Deposited in cooling tower basin by cooling water	Dirt from air	200 lb/yr	Could be hazardous, but usually not	Class II landfill if nonhazardous; Class I if hazardous
Chemical feed area drainage	Spillage, tank overflow, area washdown water	Water with water treatment chemicals	Minimal	May be hazardous if corrosive	Onsite neutralization, if required, then discharged to cooling tower basin

8.13.4 Waste Disposal Sites

Nonhazardous solid waste (often referred to as solid waste, municipal solid waste [MSW], or garbage) will be recycled or deposited in a Class III landfill. Hazardous wastes, both solid and liquid, will be delivered to a permitted offsite Treatment, Storage, and Disposal (TSD) facility for treatment or recycling or deposited in a permitted Class I landfill. The following subsections describe the waste disposal sites feasible for disposal of CVEC wastes.

8.13.4.1 Nonhazardous Waste

Mid Valley Disposal provides garbage collection services for the City of San Joaquin and for commercial and industrial facilities in the project site area. The proposed disposal facility used by

Mid Valley Disposal is the Avenal Landfill in Kings County. The Avenal Landfill has adequate capacity to handle and dispose of solid waste generated by the CVEC facility, as shown in Table 8.13-3. The most likely alternative to the Avenal Landfill is the American Avenue Landfill in Kerman. There are no open enforcement actions against either the Avenal or American Avenue landfill and no violations have been issued to these facilities for the past 2 years (Barnes, 2001).

TABLE 8.13-3
Solid Waste Disposal Facilities for CVEC Waste

Landfill/MRF/ Transfer Station	Location	Class	Permitted Capacity[a]	Permitted Throughput[a]	Remaining Capacity[a]	Estimated Closure Date[a]	Comments
Avenal Landfill	Avenal	III	6.6 million cubic yards[d]	300 tons/day	8.2 million cubic yards[d]	2040	Located in Kings County. No outstanding enforcement actions.[c]
American Avenue Landfill	Kerman/ Tranquillity	III	32.7 million cubic yards	2,200 tons/day	32.4 million cubic yards	2031	No outstanding enforcement actions.[c]
Coalinga Disposal Site	Coalinga	III	2.3 million cubic yards	30 tons/day	2.1 million cubic yards	2034	No outstanding enforcement actions.[c]
Orange Avenue Disposal Inc.	Fresno	III	0.5 million cubic yards	400 tons/day	0.4 million cubic yards	2005	One enforcement action for exceeding tonnage under current permit. Violation is being corrected by issuance of new permit.[c]
City of Clovis Landfill	Fresno	III	2.7 million cubic yards	354 tons/day	2.3 million cubic yards	2017	Enforcement order issued by CIWMB in Dec. 2000 for violation of state's minimum standards for landfill gas. Compliance deadline 1/31/02.[b]
Jefferson Avenue Transfer Station	Fresno	MRF	3,500 tons/day	1,250 tons/day	Not applicable	None	No outstanding enforcement actions.[c]

[a] CIWMB, 2001c. California Integrated Waste Management Board Solid Waste Information System database.
[b] CIWMB, 2001a. Inventory of Solid Waste Facilities Violating State Minimum Standards. May 4.
[c] Barnes, 2001.
[d] Permitted and remaining capacity reported as described in CIWMB database (CIWMB, 2001c)
MRF Materials Recovery Facility

Other landfills in the area include the Orange Avenue Disposal Site in Fresno. The City of Clovis Landfill and the Coalinga Disposal Site in Coalinga may eventually be other alternatives because they also have disposal capacity, but they are currently subject to enforcement orders. Regional landfills and transfer stations are shown in Table 8.13-3. Disposal of solid nonhazardous waste will not be a constraint on CVEC development.

8.13.4.2 Hazardous Waste

Hazardous waste generated at CVEC will be stored at that facility for less than 90 days. The waste will then be transported by a permitted hazardous waste transporter to a TSD facility. These facilities vary considerably in what they can do with the hazardous waste they receive. Some can only store waste, some can treat the waste to recover usable products, and others can dispose of the waste by incineration, deep-well injection, or landfilling. (Incineration and deep-well injection are not permitted in California.)

According to the California Environmental Protection Agency's Department of Toxic Substance Control, there are 46 facilities in California that can accept hazardous waste for treatment or disposal (DTSC, 2001). The closest commercial hazardous waste disposal facility is Kettleman Hills. Other TSD facilities in the regional area include a Safety-Kleen Corporation facility in Reedley.

For ultimate disposal, California has the following three hazardous waste (Class I) landfills.

8.13.4.2.1 Safety-Kleen's Buttonwillow Landfill in Kern County

This landfill is permitted at 13.25 million cubic yards and they have approximately 10.9 million cubic yards of remaining space, as of October 2000. The annual deposit rate is currently 130,000 to 150,000 cubic yards. At the current deposit rate, the landfill can accept hazardous waste until approximately 2068 to 2078. Buttonwillow has been permitted to accept all hazardous wastes except flammables, PCB with a concentration greater than 50 ppm, medical waste, explosives, and radioactive waste with radioactivity greater than 20,000 picocuries.

8.13.4.2.2 Safety-Kleen's Westmorland Landfill in Imperial County

This landfill is permitted at 4 million cubic yards and, to date, has approximately 2.4 million cubic yards of remaining space. The annual deposit rate is currently about 110,000 cubic yards; at the current deposit rate, the estimated closure date for the landfill is 2021. The landfill's conditional use permit (CUP) prohibits the acceptance of some types of waste, including radioactive (except geothermal) waste, flammables, biological hazard waste (medical), PCB, dioxins, air- and water-reactive wastes, and strong oxidizers.

8.13.4.2.3 Chemical Waste Management's Kettleman Hills Landfill in Kings County

This landfill has 6 to 7 million cubic yards of remaining permitted capacity for hazardous waste (Class I). They also accept Class II and Class III wastes. The current annual deposit rate is about 200,000 cubic yards per year. According to Chemical Waste, the landfill will be open for at least another 25 years, though they could permit additional capacity, if necessary. The Class I landfill is permitted for and will accept all hazardous wastes except radioactive, medical, and unexploded ordnance (UXO).

In addition to landfills, there are numerous offsite commercial hazardous waste treatment and recycling facilities in California. These facilities have sufficient capacity to recycle and/or treat hazardous waste generated in California. Most hazardous waste generated at the CVEC site will be generated from the flushing and cleaning of pipelines and the HRSG prior to facility startup. All hazardous waste will be removed and delivered to a TSD facility. Used oil will be collected by a permitted oil recycler.

8.13.5 Waste Management Methods and Mitigation

The handling and management of waste generated by CVEC will follow the hierarchical approach of source reduction, recycling, treatment, and disposal. The first priority will be to reduce the quantity of waste generated through pollution prevention methods (e.g., high-efficiency cleaning methods). The next level of waste management will involve the reuse or recycle of wastes (e.g., used oil recycling). For wastes that cannot be recycled, treatment will be used, if possible, to make the waste non-

hazardous (e.g., neutralization). Finally, offsite disposal will be used to dispose of residual wastes that cannot be reused, recycled, or treated.

The following subsections present methods for managing both nonhazardous and hazardous waste generated by CVEC.

8.13.5.1 Construction Phase

Nonhazardous solid waste generated during construction will be collected in onsite dumpsters and picked up periodically by Mid Valley Disposal. The waste will then be taken to the Avenal Landfill or another local landfill. Recyclable materials can be segregated and transported by construction contractors or other private haulers to an area recycling facility. Mid Valley Disposal is currently expanding its ability to handle recyclables (Barnes, 2001).

Wastewater generated during construction will include sanitary waste and could include equipment washwater and stormwater runoff. Sanitary waste will be collected in portable, self-contained toilets. Equipment washwater will be contained at designated wash areas and will be disposed of offsite. Stormwater runoff will be managed in accordance with a stormwater management permit, which will be obtained prior to the start of construction. The generation of nonhazardous wastewater will be minimized through water conservation and reuse measures.

Most of the hazardous waste generated during construction will consist of liquid waste, such as flushing and cleaning fluids, passivating fluids, and solvents. Some solid waste in the form of welding materials and dried paint may also be generated. Nonhazardous materials will be used whenever possible to minimize the quantity of hazardous waste generated. The construction contractor will be the generator of hazardous construction waste and will be responsible for proper handling in compliance with all applicable federal, state, and local laws and regulations, including licensing, training of personnel, accumulation limits and times, and reporting and recordkeeping. The hazardous waste will be collected in satellite accumulation containers near the points of generation. This waste will be moved daily to the contractor's 90-day hazardous waste storage area, located at the plant construction laydown area. The waste will be delivered to an authorized hazardous waste management facility, prior to the expiration of the 90-day storage limit.

8.13.5.2 Operation Phase

The primary waste generated during the operation phase will be nonhazardous salts from reclaimed water. Other nonhazardous solid waste will also be generated, as well as varying quantities of liquid and solid hazardous waste. Handling and mitigation of these wastes is described in the following subsections.

8.13.5.2.1 Nonhazardous Wastes

Wastewater from facility sinks and toilets will be discharged to the sanitary sewer.

Nonhazardous solid waste or refuse will be collected and deposited in a local landfill. Whenever possible, recycling will be implemented throughout the facility to minimize the quantity of nonhazardous waste that must be disposed of in a landfill.

8.13.5.2.2 Hazardous Wastes

To avoid the potential effects on human health and the environment from the handling and disposal of hazardous wastes, procedures will be developed to ensure proper labeling, storage, packaging, recordkeeping, and disposal of all hazardous wastes. The following general procedures will be employed:

- CVEC will be classified as a hazardous waste generator. Prior to facility startup, application will be made to CalEPA for a USEPA identification number.
- Hazardous wastes will not be stored onsite for more than 90 days and will be accumulated according to CCR Title 22.
- Hazardous wastes will be stored in appropriately segregated storage areas surrounded by berms to contain leaks and spills. The bermed areas will be sized to hold the full contents of the largest single container and, if not roofed, sized for an additional 20 percent to allow for rainfall. These areas will be inspected daily.
- Hazardous wastes will be collected by a licensed hazardous waste hauler, using a hazardous waste manifest. Wastes will only be shipped to authorized hazardous waste management facilities. Biannual hazardous waste generator reports will be prepared and submitted to the Department of Toxic Substances Control (DTSC). Copies of manifests, reports, waste analyses, and other documents will be kept onsite and remain accessible for inspection for at least 3 years.
- Employees will be trained in hazardous waste procedures, spill contingencies, and waste minimization.
- Procedures will be developed to reduce the quantity of hazardous waste generated. Nonhazardous materials will be used instead of hazardous materials whenever possible, and wastes will be recycled whenever possible.

Specifically, hazardous waste handling will include the following practices. Handling of hazardous wastes in this way will minimize the quantity of waste deposited to landfills:

- Waste lubricating oil will be recovered and recycled by a waste oil recycling contractor, such as All Valley Disposal. Spent oil filters and oily rags will be recycled.
- Spent SCR and oxidation catalysts will be recycled by the supplier, if possible, or disposed of in a Class I landfill.
- Chemical cleaning wastes will consist of alkaline and acid cleaning solutions used during pre-operational chemical cleaning of the boiler system of the HRSGs, acid cleaning solutions used for chemical cleaning of the HRSG after the unit is put into service, and turbine wash and HRSG fireside washwaters. These wastes, which are subject to high metal concentrations, will be stored temporarily onsite in portable tanks and disposed of offsite, in accordance with applicable regulatory requirements. Disposal may consist of offsite treatment, recovery of metals, and/or landfilling.

8.13.5.3 Facility Closure

When CVEC is closed, both nonhazardous and hazardous wastes must be handled properly. Closure can be temporary or permanent. Temporary closure would be for a period of time greater than the time required for normal maintenance, including overhaul or replacement of the combustion turbines. Causes for temporary closure could be a disruption in the supply of natural gas, flooding of the site, or damage to the plant from earthquake, fire, storm, or other natural causes. Permanent closure would consist of a cessation in operations with no intent to restart operations and could be due to the age of the plant, damage to the plant beyond repair, economic conditions, or other unforeseen reasons. Handling of wastes for these two types of closure are discussed below.

8.13.5.3.1 Temporary Closure

For a temporary closure, where there is no release of hazardous materials, facility security will be deployed on a 24-hour basis, and the CEC will be notified. Depending on the length of shutdown necessary, a contingency plan for the temporary cessation of operations will be implemented. This plan will be prepared prior to CVEC startup. The plan will be developed to ensure conformance with all applicable LORS and the protection of public health and safety and the environment. The plan, depending on the expected duration of the shutdown, could include draining all chemicals from storage tanks and other equipment and the safe shutdown of all equipment. All wastes will be disposed of according to applicable LORS, as discussed in Section 8.13.2.

Where the temporary closure is in response to facility damage, or where there is a release or threatened release of hazardous waste or materials into the environment, procedures will be followed as set forth in a Risk Management Plan (RMP). The RMP is described in Section 8.12.8.4. Procedures include methods to control releases, notification of applicable authorities and the public, emergency response, and training for generating facility personnel in responding to and controlling releases of hazardous materials and hazardous waste. Once the immediate problem of hazardous waste and materials release is contained and cleaned up, temporary closure will proceed as described for a closure where there is no release of hazardous materials or waste.

8.13.5.3.2 Permanent Closure

The planned life of the generation facility is 30 years, though operation could be longer. When the facility is permanently closed, the handling of nonhazardous and hazardous waste and hazardous materials will be part of a general closure plan that will attempt to maximize the recycling of all facility components (see Section 4.0). Unused chemicals will be sold back to the suppliers or other purchasers or users. All equipment containing chemicals will be drained and shut down to protect public health and safety and the environment. All nonhazardous wastes will be collected and disposed of in appropriate landfills or waste collection facilities. All hazardous wastes will be disposed of according to applicable LORS. The site will be secured 24 hours per day during the CVEC decommissioning activities.

8.13.6 Cumulative Impacts

The CVEC facility will generate nonhazardous solid waste that will add to the total waste generated in Fresno County and in California. However, there is adequate recycling and landfill capacity in California to recycle and dispose of the waste generated by CVEC. It is estimated that CVEC will generate approximately 850 tons of solid waste during construction and about 14,000 tons a year from operations (including approximately 3 tons of hazardous waste). Compared to the total amount of solid waste landfilled in Fresno County in the year 2000 of 694,617 tons, CVEC's contribution will represent approximately two percent of total county waste generation (CIWMB, 2001b). Therefore, the impact of the project on solid waste recycling and disposal capacity is not significant.

Hazardous waste generated will consist of waste oil, filters, SCR and oxidation catalysts, and fluids used to clean the HRSGs and piping. The waste oil and catalysts will be recycled. Cleaning and flushing fluids will be removed and disposed of offsite. Cleaning and flushing will occur only periodically. Hazardous waste treatment and disposal capacity in California is more than adequate. Therefore, the effect of CVEC on hazardous waste recycling, treatment, and disposal capability is not significant.

8.13.7 Monitoring

Because the environmental impacts caused by construction and operation of the facility are expected to be minimal, extensive monitoring programs will not be required. Generated waste, both nonhazardous and hazardous, will be monitored during project construction and operation in

accordance with the monitoring and reporting requirements mandated by the regulatory permits to be obtained for construction and operation.

8.13.8 Involved Agencies

Several agencies, including USEPA at the federal level and Cal/EPA at the state level, regulate nonhazardous and hazardous waste and will be involved in the regulation of the waste generated by CVEC. The hazardous waste laws, however, are administered and enforced primarily through local agencies. For CVEC, the primary agency for hazardous waste issues will be the Fresno County Environmental Health Department, which is the designated CUPA for the area. The agencies and persons to contact for each type of waste are shown in Table 8.13-4.

TABLE 8.13-4
Agency Contacts for CVEC Waste Management

Topic	Agency	Address	Contact	Title	Telephone
Nonhazardous Waste					
Solid Waste	County of Fresno Human Services System Department of Community Health Environmental Health System	1221 Fulton Mall, Brix Bldg P.O. Box 11867 Fresno, CA 93775	Milton Barnes	Solid Waste Specialist	559-445-3271
Hazardous Waste					
Hazardous	County of Fresno Human Services System Department of Community Health Environmental Health System	1221 Fulton Mall, 3rd Floor P.O. Box 11867 Fresno, CA 93775-1867	Harry Yee	Hazardous Materials Specialist	559-445-3271

8.13.9 Permits Required and Permit Schedule

Table 8.13-5 lists the permits required by Fresno County.

TABLE 8.13-5
Permits Required and Permit Schedule for CVEC Waste Management

Permit	Applicability	Schedule for Permit
Flammable or Combustible Liquids Storage Permit	Fresno County Fire Code requires that businesses obtain permits for the use and storage of flammable and combustible liquid wastes.	Prior to storage of flammable or combustible liquid wastes at the site.

8.13.10 References

Barnes, M. 2001. Fresno County Human Services System, Department of Community Health, Environmental Health System. Personal communication. June 1 and October 16.

CIWMB. 2001a. California Integrated Waste Management Board (CIWMB). "Inventory of Solid Waste Facilities Violating State Minimum Standards." May 4.

CIWMB. 2001b. "Landfill Tipping Fees and Tonnage Data. 2000 County Summary Tonnage Report." May 29.

CIWMB. 2001c. "Solid Waste Information System (SWIS) Database."

California Environmental Protection Agency, Department of Toxic Substance Control (DTSC). 2001. "California Commercial Offsite Hazardous Waste Management Facilities." February 14.

Environmental Resources Management (ERM). 2001. "Phase I Environmental Site Assessment, Proposed Central Valley Energy Center Site, San Joaquin, California. August 3.

Hill, B. 2001. All Valley Disposal. Personal communication. June 1.

Mendrin, R. 2001. Mid Valley Disposal. Personal communication. June 1.

Yee, H. 2001. Fresno County Human Services System, Department of Community Health, Environmental Health System. Personal communication. May 25.